**Heat – Study Sheet**

**Energy**: the ability to make objects move.

**10 Forms of Energy**: thermal, chemical, magnetic, light, gravitational, nuclear, electrical, elastic, sound, mechanical

**Energy Transformations**: is a change from one form of energy to another

**Renewable Energy Sources**: sources that can be re-used or replaced (wind, solar, geothermal, tidal, etc.)

**Non-renewable Energy sources**: sources that cannot be re-used or replaced (natural gas, coal, oil, etc.)

**Temperature:** the measurement of the average energy of moving particles of a solid, liquid or a gas

**Heat**: the thermal energy transferred from an area of higher temperature to an area of lower temperature

**Thermal Energy**: is the total energy of all the moving particles in a solid, liquid or gas

**Thermometer**: is an instrument used to measure the temperature of solids, liquids and gases

**Heat Transfer**: heat is transmitted through the environment by conduction, convection and radiation

**Conduction**: is the transfer of heat through a solid or between a solid and another solid, liquid or a gas that it is touching

**Convection**: is the transfer of heat through a fluid (a liquid or a gas)

**Radiation**: (radiant energy) is the transfer of heat in the form of waves- infrared waves

**Important Point and Concepts:**

\*Water is continuously moving and changing states in nature.

\*Heat creates the water cycle and affects weather.

\*The water cycle and ocean currents depend on convection.

\*Many of Earth’s features were and are formed by heat.

\*Heat is often released to the environment when energy is transformed.

\*Producing energy can release heat and gases into the environment.

\*Heat pollution of land, water and the atmosphere affects the environment.

\*Human activities release gases that might contribute to global warming.

\*Global Warming is the worldwide average increase in temperature of Earth’s atmosphere, land and oceans.

\*Greenhouse Effect – is the belief that many scientists have that human activities release greenhouse gases into our atmosphere. They agree that this causes more heat to be trapped, causing Earth’s temperature to rise.

**Heat Flow in the Water Cycle:**

Water vapour rises, cools and condenses into clouds.



Water evaporates

Rivers flow into the ocean

Water that the ground cannot absorb fast enough or that falls on an impermeable surfaces becomes run-off

Rain runs into rivers and lakes and soaks into the ground, refilling aquifers

Precipitation in the form of snow may become part of a glacier

Cloud moisture is released as precipitation